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ABSTRACT

This documents consists of two monographs, first published in 1973 and 1975, which examine the purpose and functions of institutional policy in dealing with the problems and issues affecting higher education. Their focus is conceptual, and the discussion looks to the philosophical, historical, and sociocultural underpinnings of institutional policy. The first monograph examines public policymaking process as it relates to administration, legislation, ideology, and theory, and also with policy functions and issues, examining planning, decision-making, and programs as functions of policy. The second monograph examines technological change, such as systems analysis, operations research, and management science, and its affect on policy. Two models for reconciling the basic conflict between technology and public policy are offered. The first is a six-step synoptic model for general problem solving; the second heuristic model for political decision making is a group process in which the center of the model is the target for participants in the decision-making process and the action is an interchange rather than a sequential process. The paper concludes that while either model can be effective under some circumstances, the magnitude and complexity of problems to be solved require the complementary features of both models. (Contains 9 endnotes and 39 references.) (CH)

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THE PURPOSES AND FUNCTIONS OF POLICY: PLANS, PROGRAMS, AND DECISIONS

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THE UNIVERSITY OF GEORGIA
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FOREWORD

In the early 1970s many of us were trying to assimilate the 1960s and a few of us even had hopes of understanding "what was going on? and what did it mean?" At least one of us was convinced that faculty dissent, student protests, and campus violence were a massive, if not classic, demonstration of "frustration and displaced aggression."

Perhaps no other decade in higher education has begun with such high expectations—and ended with so much disillusionment. In retrospect, the 1970s are much easier to explain than the 1960s—and to an appreciable extent, there may be more to learn from the 1970s than from the 1960s.

One of the more promising reactions of the 1970s was the reconsideration of "first principles" in the changes taking place in higher education. Public policy and its effect on institutional programs, services, and activities received the kind of public attention that was too often missing on national agendas. The haste with which some programs were funded, organized, and implemented was not conducive to the solution of social, legal political, economic, and administrative problems in the nation's colleges and universities.

Reprinted in the following pages are two brief monographs that address some of the crucial policy issues, the promises of technological transfer, and increased demands for effective solutions and decisions in the formation of institutional policy. First published in 1973 and 1975, respectively, the two monographs are reprinted as one with modest, if not false, confidence that their relevance in 1999 will be appreciated. With minor editing changes, the footnotes are reprinted for the first monograph and references are reprinted for the second monograph.

Cameron Fincher
Regents Professor
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May 12, 1999

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INTRODUCTION

The turbulence of the 1960s produced several major conceptual shifts in national thought and discussion. When seen as radical departures from familiar practices and points of view, such shifts are quite noticeable—and for institutions of higher education, an increasing concern with institutional and public policy was quite evident throughout the following decade.

The shifting of academic attention to policy issues is understood more readily as a reaction to disappointment in the effectiveness of federally funded programs as a means of achieving national objectives. As perceived at the time, large-scale programs and projects had failed to solve the problems or resolve the issues with which schools and colleges must cope. In particular, programs such as Head Start, Upward Bound, and Title I of the Elementary and Secondary Education Act, despite abundant funding, were subjected to intense criticism with the clear implication that they had not met the expectations of either their proponents, the federal government, or the general public.[1]

Conceptual shifts, on most occasions, simply mean a search for better ways of dealing with the complexities of the situation. And a better way of solving problems begins with a reconceptualization of the problem and a search for better methods of attack. As a result, policy was advocated as a more viable alternative by permitting decentralized programs that could respond more directly to specific needs and circumstances. A more active concern with policy need not reflect changes in the centralization of policy decisions, either at the federal or state levels. What it did reflect, however, was a recognition that inadequate attention to policy had not been conducive to program development and effectiveness. Thus, the sense of urgency in the 1970s, often referred to as higher education's "time of troubles," can be interpreted as a failure to develop educational programs and projects that could reduce the anxieties of the publics served by institutions of higher education. Not only was the failure of such programs attributed to the lack of clarification in the major policy issues confronting the nation but failure was due, in part, to the inconsistent application of policies to institutions that must provide the programs needed.

The intent of this publication is to examine the purpose and functions of policy as a conceptual focus for the problems and issues of higher education. The clarification of policy issues would seem directly dependent upon a better understanding of policy itself. The nature, uses, and limitations of policy were not adequately understood and there was little evidence that educational leaders were better prepared in the 1970s to debate policy than they were to handle the programmatic trials-and-errors of the sixties. In 1973 over 22 million dollars was proposed in the national budget for policy research and a National Institute for Education had been established with full expectation that it would address itself to policy issues confronting the nation. Indeed, judged by frequency of usage alone, the term policy became a crucial component of the educators' ideational armament with which to face the struggles of the seventies. To make that struggle more intelligent, a better informed appreciation of policy would appear to be in order.

THE CONCEPTUAL DIFFICULTIES OF POLICY

The conceptual shift to policy represents, to no small extent, a return to first principles—a concern with philosophical, historical, and sociocultural underpinnings as opposed to direct action through programs and projects. Should the shift be no more than a retreat to philosophical debate, however, it will be especially tragic. There is disillusionment with massive programs as such, but the discontent should provoke a more constructive response than verbal quibbling.

Because of its abstract nature, policy is difficult for many educators to debate. The rush to debate the content, substance, or advantages of specific policies will leave many impatient with the form and functions of policy per se. Yet, there is serious reason to believe a similar haste in the 1960s was responsible for the failure of numerous programs and projects. For example, the Education Professions Development Act (EPDA) produced an impressive array of programs and activities that were developed within the Bureau of Educational Personnel Development. The thrust of these EPDA programs was to improve the qualifications of educational personnel who serve low income and minority groups. As commendable as the thrust of the programs had been, however, there was an absence of concern with policy. No rationale was developed that would designate the objectives, priorities, and strategies of the programs and activities funded under the Act. There was no effort to analyze systematically the problems that would limit the effectiveness of personnel

working with low income and minority groups, no critical examination of previous or present arrangements for training such personnel, and no rationale for the forms of change or innovation that were advocated so frequently by the Bureau. In brief, the problems and issues underlying the programs were not critically examined and no effort was made to formulate policy that would undergird such programs.[2]

The need for a better understanding of policy was heavily underscored by the Carnegie Commission on Higher Education, the AAAS Assembly on University Goals and Governance, and the HEW Task Force on Higher Education.[3] The Carnegie Commission had identified a number of critical problems and issues that could be resolved through a more effective use of policy. The Assembly on University Goals and Governance gave good credence to the need for renewal while the HEW Task Force made an even stronger plea for reform. But whether the various commissions and committees were seeking revised policy for purposes of stability, continued growth, or change for change's sake, the purpose and functions of policy were not clearly explicated.

The shaping of public policy—and its confusion—may be witnessed, to good advantage, in the hearings, floor debates, and committee reports that preceded the enactment of the Education Amendments Act of 1972. That public policy does not coalesce upon legislative enactment is demonstrated quite well by the administrative action taken on the basis of the Act. The shaping of policy will continue further as the legislation or the ensuing administrative action is subjected to judicial review. It is the interactive process of legislation, administrative action, and judicial review that makes the determination of public policy difficult to follow.

A schematic representation of the public policy-making process is given in Figure 1. The formulation of public policy is viewed against a backdrop of central government in which the interaction of the executive, legislative, and judicial branches is seen in relation to public reaction. The inputs to policy formulation are shown simply as a set or matrix of inputs that would include such variables as self-interest, ideology, and public tension. The two major forms of feedback to central government are shown as the somewhat direct route that may be taken through the appellate courts and the broader, more diffuse avenue of organized influence.[4]

Each of the components in Figure 1 could be broken out for further elaboration. As in most flow charts, there is a simplification of the overall

process for purposes of explication. Neither the subtleties of organized influence nor the complexities of appeal can be depicted within the framework but their importance should be understood. The gist of the chart is to emphasize the extended, cyclic nature of the process and to counter the naive notion that public policy is a governmental decision made at some point in time. It is precisely this continuing cycle that makes a more sophisticated understanding of policy mandatory for those concerned with higher education.

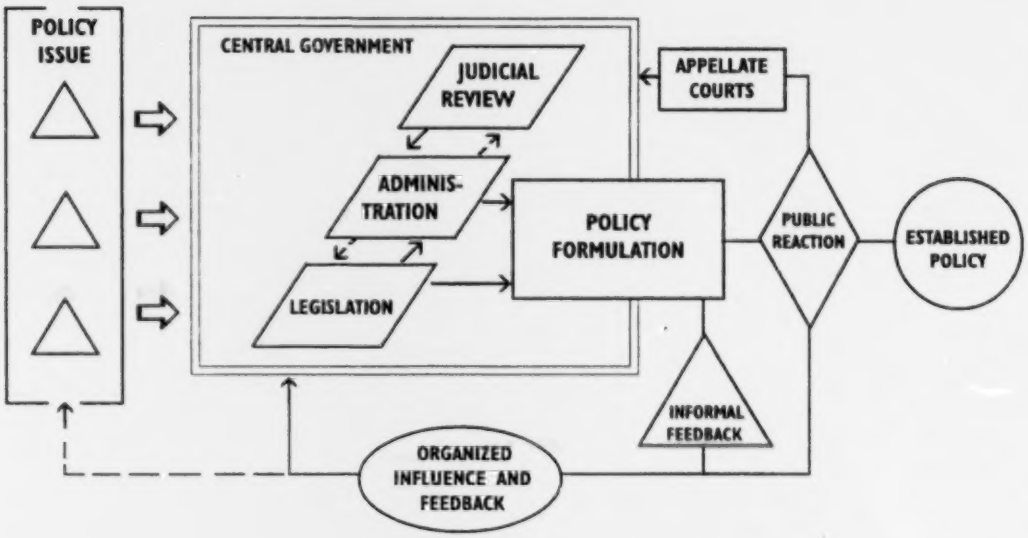
SOME DISTINCTIVE FEATURES OF POLICY

Policy may be understood in terms of its purposes and functions, its advantages and limitations, or its special features. The purposes may be both general and specific, but the concept of policy has both a full and a limited meaning that is not always clear. For example, the policies, programs, and functions of government are often used collectively and synonymously. Too often the term is an empty noun that serves only to anchor an area of agricultural policy, foreign policy, economic policy, labor policy, and welfare policy. This usage more or less makes the term synonymous with the activity itself.

For a clarification of policy in higher education, it is advisable to distinguish quickly between public policy, as reflected in governmental action, and institutional policy, as it reflects the autonomy and independence of our separate colleges and universities. The fact that institutional policy does not follow directly from public policy is a source of considerable confusion. Public institutions may be directly influenced by state or community action, but institutional policy is a derivative of public policy only in the loosest sense. By the same token, public policy is more than an aggregation of institutional policies. An example of this confusion may be seen in a national policy of universal access to higher education that has been continuously thwarted by conflicting institutional policies.

To gain a better conceptual grasp of policy, it would seem advisable to distinguish carefully between policy on the one hand and administration, legislation, ideology, and theory on the other. In the usage of these terms there are inherent ambiguities and a bit of overlap that should make the contrast helpful. Examples of the distinctions may be drawn more readily for public policy but the implications for institutional policy should be obvious.

Figure 1.
THE PUBLIC POLICY-MAKING PROCESS



Policy Versus Administration

There is a traditional distinction that views administration as the execution of policy with no acknowledgment of an interaction between the two. Some administrators still regard their responsibilities in this light, but such a viewpoint does not consider the influence of administrative decision making on the formulation of policy.

The interaction of administration and policy formulation implies that as an administrative decision becomes an accomplished fact, there is an incremental change in policy as such. This interaction is readily seen in situations where an appeal for administrative decision must travel up the organizational hierarchy and back down again. Each appeal, in some small way, establishes a precedent which may become a guide for future administrative action. The particular point in time when administrative precedent becomes indistinguishable from a change in policy is quite difficult to identify. The interaction of administration and policy, however, need not blur the distinction that is made in classical management literature between policy-making boards and executives who implement policy. At the same time, it is necessary to recognize that as a decision, technology

emerges from the management sciences, the policy-making function becomes more important as a focal point in the administrative domain. Administrative decisions not only become more routine but increasingly automated as they are rightly concerned with operational matters.

With specific reference to public policy, it is well to recall V. O. Key's contention that governmental agencies have a tradition, outlook and policy inclination of their own. Federal agencies may well have a momentum and a pattern of action that escape direction as well as an institutional inertia that is quite prevalent.[5] For this reason, policy should not be confused with traditions or points of view that characterize governmental agencies. We should recognize, nonetheless, the propensity some agencies have for revolving personnel and their reputation for unstable operational policies that are dictated by the personal preferences or career objectives of transitory staff. The administrative reorganization of the U. S. Office of Education under the Education Amendments Act of 1972 may be interpreted as a Congressional attempt to cope with just such a problem. The creation of a Division of Education in HEW with an Assistant Secretary responsible for both the Office of Education and the newly established National Institute of Education would seem both an effort to alter certain policy-making activities of the Office of Education and an attempt to make the federal government more responsive to policy issues as seen by Congress.

Policy Versus Legislation

In many discussions of policy it is necessary to recall that the enactment of laws is a reflection of public policy but not its sole expression or determinant. Too frequently, the practical minded will take the wording of legislation as the only expression of policy while the literal minded believe policy to be just what the legislation says and nothing more. Such a viewpoint ignores the problems and procedures of interpretation. As in administration, policy both precedes and follows its overt expression in the form of legislation. But because of the ambiguity of policy and its failure to crystallize readily in areas of complex issues, legislation may contribute further to the ambiguity it was supposed to remove.

This would seem especially true of the 1972 legislation dealing with institutional aid, statewide planning, and emergency assistance to institutions in distress. In each case the wording of the legislation would suggest a rather straightforward solution of a policy issue. Yet, the translation of the legislation into administrative action had floundered because of uncertainty as to what national policy on these three issues

should be. In tying cost-of-education payments to basic and supplemental grants of student assistance, the legislation fails to clarify the national policy for financial aid to those colleges and universities presumably educating the majority of low income and minority group members in postsecondary education. Efforts to encourage better statewide planning for the expansion and improvement of postsecondary education were delayed because of the uncertainty concerning planning as opposed to planning-and-coordination. Assistance to institutions in financial distress is unclear because of what seems to be direct contradiction with several other national policies that would encourage economic efficiency in institutional operation.

Yet, the Education Amendments Act of 1972 gives a clearer indication of public policy than the Higher Education Act of 1965 now does. The intentions of Congress in 1965 were very much a part of the discussion in extending the various authorizations five years later. As a result of what Congress believed to be administrative ignorance of public policy, certain sections of the Education Amendments Act are more explicit and directive than we would ordinarily find legislation to be. Granting the many shifts that have occurred in policy itself, it would still follow that the cycling of the 1965 Act through the ensuing programs and projects, with the opportunity to test in federal courts, and through the legislative corridors again gives a better understanding of both congressional intent and the substance of policy itself. Where the intent and form of the legislation remain the same, as in assistance to developing institutions, we may conclude that public policy is, for the moment, established and accepted.

Policy Versus Ideology

The role of pressure groups, special interest groups, and other politically active agencies is a necessary part of the national effort to formulate policy, but the viewpoints expounded and promoted should not be confused with policy as such. Groups that mediate the interests of the general public and the aspirations of various organizations necessarily supply a fund of coherent proposals and viewpoints that are policy-oriented. To refer to these viewpoints as ideology need not be pejorative. The realities of life require a supplier of organized, preformed ideas that consider the public interest in a particular problem area. The lobbyist plays an essential role in legislation and the professional organization has a much valued role as a supplier or broker of ideas, suggestions, and criticisms.

Yet, it is the promotional campaign, publicity drive, or rhetorical barrage that is too often confused with policy. As necessary as lobbies, information agencies, and national secretariats are, they should be regarded as a part of the policy forming process and not as the embodiment of policy. To cite V. O. Key again, the importance of group interests and their stake in public policy is clear. Private or professional associations are indeed engaged in the politics, but public policy is not originated or consummated with the opening of a national office in Washington.[6]

For higher education, the role of ideology has not been as blatant as in other sectors, but its importance should not be denied. The months preceding the passage of the Education Amendments Act suggested a dearth of consistent, appealing ideology that was supportive of the amendments. Whereas in previous years there had been an ideological appeal to national defense, trained manpower in crucial occupations, and international competition, as in the space race, no sustaining appeal was heard in 1972. The major organizations housed at the National Center for Higher Education were severely criticized by Congressional leaders for not providing a suitable ideological gusto for the passage of the Act. Some organizations promoted with good protective instinct the passage of certain segments but did not move beyond the range of their immediate interests. The one ideological thread that ran through the many sections and passages was handled with reluctance by the national secretariat. This was the continuing upward thrust of minority groups and the necessity of their cultural accommodation.

Policy Versus Theory

The differences between policy and theory are both more subtle and more interesting than those between policy and administration, legislation, or ideology. Theory has a diversity of meanings but there are usages of the term where a discussion of both similarities and differences should clarify the meaning of policy.

When theory is used as a set of plausible or generally accepted principles that are offered for the explanation of specific phenomena, the similarity with policy is quite noticeable. Indeed, the way in which general theories in the fields of economics and foreign relations are used makes it quite difficult to distinguish that usage from the broader conceptions of policy. A theory of supply and demand, for example, may reflect only the policies that have been adopted by various sectors of the economy.

In its more systematic usage, theory is regarded as a set of hypotheses or laws that are fairly well established and have broad but useful applications. When used in this manner, both theory and policy may be regarded as a general, overall, rational canopy under which more specific concepts of action, procedure, and operation can e housed. Both should be cover a range of past situations and conditions while suggesting ways in which new situations and conditions can be met. In this way, both theory and policy would be expected to explain certain events that take place.

Other relationships between theory and policy are more difficult to depict. To a certain extent, policy may be the theory that best accounts for administrative and legislative action. At the same time, policy often draws heavily from established theory in certain fields but it does not achieve the degree of comprehensiveness or formality that theory is capable of providing. Economic, political, and social theory would seem to weigh heavily in many recent attempts to shape or mold public policy. Economic concepts of productivity and efficiency have been used with increasing frequency but may not provide the theoretical base that sound policy would require.

For the most part, theory inputs to policy formulation in higher education have been both fragmented and spasmodic. The theoretical bases for most public policy would not seem extensive, and efforts to introduce theory is not well regarded. Social theory, in particular, would seem to suffer from reputational difficulties among many persons concerned with policy formulation. Harold Orlans, for example, has taken an unusually critical look at the role of the behavioral and social sciences in the formation of public policy. Not only does he accuse social scientists of a lack of scientific objectivity in policy issues but he chastises both the scientists and their associations for a lack of policy sophistication.[7]

Yet, the unencouraging results of federal programs for disadvantaged and minority groups must rest in part on the shaky theoretical bases for such programs. Programs for early childhood education have been based on theoretical preferences that had the best of intentions but a lesser degree of empirical support. In much the same manner, the enthusiasm of other federal programs suggests an opportune grasping of supportive theory rather than a critical examination of its relevance for the kinds of programs it presumed to support. The optimism, for example, of compensatory education programs may have precluded a wiser choice of theoretical insights to their possible implications. Some programs did indeed reinvent the wheel but did not design an axle.

POLICY FUNCTIONS AND ISSUES

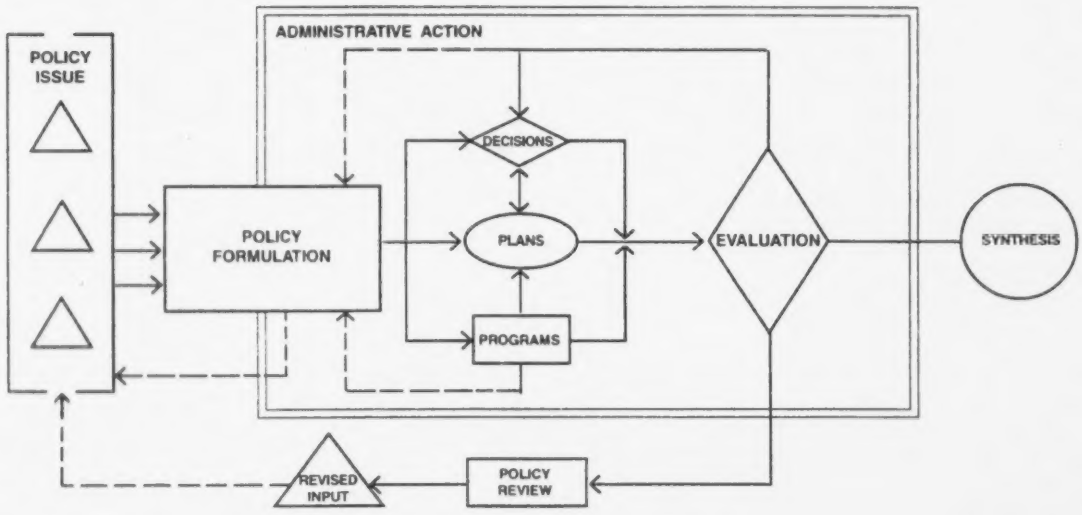
If the purpose of policy is to provide a general, overall, rational canopy for specific actions, procedures, or operations, it should follow that the specific functions of policy are decisions, plans, and programs. Implicit in the formulation of policy is a series of assumptions concerning the situations and conditions under which decisions are made, plans are constructed, and programs are developed. Decisions, plans, and programs therefore would seem the specific, concrete actions that would logically follow from policy as a body of agreements, commitments, assumptions, understandings, or other antecedent conditions under which action occurs.

Policy therefore is not so much a sufficient condition for the execution of plans, decisions, and programs as it is a necessary condition for the meaningful structure of such actions or activities. It is a logical antecedent to such events but may not precede in time its logical consequences. As a result, policy is more often in a state of becoming than an accomplished fact.

Plans, decisions, and programs as functions of policy are depicted in Figure 2. There the functions of policy may be seen against a backdrop of administrative action in which policy formulation plays a dominant role. As in the public policy-making process, the interactive and feedback mechanisms are essential. Decisions, plans, and programs are not necessarily independent of each other and are not functions solely of policy. The extent to which they are determined by policy, however, is a major test of the adequacy and effectiveness of policy within the organizational structure.

The components of evaluation and policy review have not been well articulated in the past but show evidence of better development in the future. The current concern with evaluation research and the recent infatuation with policy research suggest that both will receive increasing attention. The specific location of both activities, however, may be suspect. The intent of Figure 2 is to depict decisions, plans, and programs as reasonably direct functions of policy and to suggest some of the interrelated complexities of a process in which decisions, plans, and programs not only reflect policy but contribute substantially and formally to its formulation. As a rationale, policy may be either explicit or implicit; it may be unwritten or well codified and documented. In any event, it should be the logical canopy under which the major functions and activities of

Figure 2.
THE FUNCTIONS OF POLICY



organizations and institutions take place. As such, policy is instrumental in the design, development, and implementation of organizational or institutional action. Policy may not be final, absolute, perfect, or complete, but it should be suggestive or indicative of constructive action and it should permit plans, decisions, and programs that are more open, better informed, realistic, and intelligent.

Plans As A Function Of Policy

Plans may be defined as an explicit way of structuring future decisions and actions. Abraham Kaplan has written that a plan is a configuration of goals consistent with each other grounded in the facts of the case, and specified in terms of an action sequence expected to lead to their attainment. The conjunction of ends and means is essential and unless the two are reciprocally determined, action will be directed to limited objectives that have no meaning beyond themselves.[8]

Another way of saying this is that plans are structural in the sense of being organized expectations of what is to be accomplished. To designate what we would accomplish requires that we have some logical framework in which to do so. An attractive campus plan, for example, is

undoubtedly worked out in a policy setting that precludes the notion that chaos is preferential. Only when there is some kind of policy to make the campus attractive, does a campus plan become meaningful.

Campus development plans then are the obvious example. The construction of physical facilities requires a stepwise progression with detailed explication of the various phases. While not so obvious, the development of academic programs and public service activities also requires some form of explicit plan that would enable observers to see the next unfolding steps and to anticipate something other than mere continuance.

Plans may be distinguished from policy in several ways. For the most part, policy is contextual while plans are focal; one is background while the other is figure. There is a further distinction in that plans may be physically represented in models whereas policies almost never are. A scale model of the campus plan, for example, would be most helpful in discussing the future development of a college. A scaled model of the policies that would facilitate that growth and development would be a contradiction.

In discussing plans that have been developed in keeping with policy, the process of planning as such is strongly implied. Planning as an activity has an intricate relationship with policy formulation in that the two may continuously interact, with both evolving over a period of time and exerting mutual influence over the other. Policy must be stable enough for a plan to be developed, prepared, or constructed. After their development, plans may influence policy but not as directly or immediately as the planning process itself. Once developed, however, plans may become peremptory and stultify the formulation of more effective policy.

Decisions As A Function Of Policy

As a necessary condition for decisions, policy represents the fund of knowledge and comprehension from which decision makers draw in the operational judgements and choices that are made on a routine basis. For that reason, policy may not be as easily distinguished from decisions as plans and programs are. As mentioned previously, policy not only precedes administrative decisions but follows from them. Most administrators do indeed influence policy as they act directly in problem-solving situations, but administrative decision, even on policy matters, should not be confused with the substance of policy itself. It is possible to describe in behavioristic terms much that occurs in a decision-making situation without adequately involving the substance and boundaries of policy.

Despite the need to understand how policy decisions are made, it does not follow that policy formulation must be subsumed under decision theory.[9] At the present time decision theory must make certain assumptions that are ill-adapted for policy formulation. The psychological task of constructing and comparing several alternatives of actions has proven to be more difficult than first expected. When there is sufficient complexity in a decision situation, the limitations of memory and the difficulties of considering the various alternatives become evident. More important, however, it would appear that decision theory does not have the degree of comprehensiveness that policy requires. At the present time, decision theory is able to handle only behavior at a much lower level of complexity.

A major reason for regarding policy as a conceptual framework in which decisions are made is that the degree of participation and involvement varies between the two. The strong push for participatory democracy in higher education has let many groups, such as faculty members and students, to believe that they should be actively involved in the decision making that directly affects them. A more realistic expectation could be realized by their active involvement in policy formulation. Decisions must be subjected to routines, schedules, and other operational constraints that policy cannot be subjected to in the same way. A realistic input to policy would be most feasible, provided an adequate understanding of the policy-forming process could be developed on the part of those who would participate.

Another reason concerns the more urgent nature of decisions as opposed to the deliberative nature of policy. Because of their urgency, however, decisions frequently outrun policy and lead to a failure of policy as well as to a lack of planning. In any event, it is well to mention that both decisions and policy can be made by default as easily as direct action. A policy of not making decisions hastily can undermine the authority of both policy and decision.

Programs As A Function Of Policy

The development of programs and projects within the framework of policy may be the least understood aspect of the policy process. Policy has not been construed in such a manner that it would guide, shape, and sustain the programs and projects that would produce the results and outcomes that are desired. Policy is often implicit in certain features of program development but with little expectation that it will become more explicit as the program achieves some measure of success. More often,

there is a questionable effort to formulate an acceptable degree of policy after the completion of the program. The formulation of policy in such a manner is seldom satisfactory.

As a logical consequence of policy, programs are expected to have a designated period of time and a specified location that plans and decisions do not always have. Programs are different also in calling for a more complex organization of time, personnel, equipment, materials, and facilities. For this reason, programs and projects may be impervious to changing policy needs. This is especially true in higher education where academic programs frequently acquire a kind of functional autonomy and succeed in perpetuating themselves despite policy, plans, and decisions to the contrary.

The success or effectiveness of programs and projects in higher education should not obscure the logical priority of policy. The degree to which policy is explicit will vary with the area or level of program complexity, but the need for policy considerations is nonetheless important. The better the policy-making process can be articulated in meaningful ways, the more effective the programs and projects generated within that framework should be.

In brief, the purpose of policy is to provide a general rationale for the functions of decisions, plans, and programs. The degree to which that rationale is explicit will vary with the area or level of policy, but some degree of intelligible structuring should underlie the process whereby policy decisions are made and implemented through programs, plans, and action. As policy is articulated in more meaningful ways, the more effective the policy-making process should become.

POLICY AND TECHNOLOGICAL CHANGE

The transfer of methods, processes, and techniques from one organizational setting to another is an obvious source of technological change or transfer. As better methods of production, transportation, and communication are developed, their diffusion and adoption among other organizations presumably follow as a matter of course. In cases such as the video tape recorder the time span from initial conception to widespread use can be remarkably short. When the technique is primarily conceptual and does not have the benefit of obvious instrumentation, the process of

technological innovation is much longer. Whereas the video tape recorder required but six years for development and use, input-output economic analysis, as an example of the latter, took 28 years *(Science, Technology, and Innovation, 1973).*

Over the years a remarkable confidence in technology transfer has emerged, dimmed, receded, and then accelerated. The rapid increase in federal funding of research and development during the fifties and sixties came with the explicit expectation that technological transfer would follow. Research and development expenditures for military defense, space exploration, and atomic energy were justified not only in terms of immediate and direct need but in terms of spin-offs, spill-over, or fallout. It was fully expected that the new technologies created would transfer to other sectors of the civilian economy. This transfer would permit the accomplishment of national goals by spurring the national economy and by making available a host of technological innovations that would further enhance the American life style. The technology or knowledge acquired in a lunar landing, for example, would be more important than the mission itself *(Furash, 1968).*

Technological change was then perceived as a permanent, progressive force in contemporary society *(Schon, 1967).* Innovation became a dominant feature of the conventional wisdom concerning economic growth and was deemed crucial to any discussion of national goals *(National Commission on Technology, Automation, and Economic Progress, 1966).* New technologies became the means to new possibilities within the social order and the spur to new organizations within society. These technologies exerted great pressure toward the increased rationalization of economic and political processes and suggested the widespread adoption of techniques that had previously been regarded as arcane *(Mesthene, 1970).*

During the sixties the advocacy of technology transfer had a particularly strong appeal in the area of public policy. The dimensions of social, economic, and political problems were believed to exceed the capabilities of policy makers. This suggested, in turn, the necessity of systematic planning and an increasing reliance upon an extensive collection and analysis of data that was not feasible under traditional policy-making approaches *(Taviss, 1972).* The transfer of technology to the social, economic, and political arenas of government and society was clearly mandatory under the terms and conditions of the rhetoric that prevailed.

Yet the advocacy of technological transfer was not without a strong counterpoint. Technology was intensely criticized as the source of personal alienation, cultural displacement, and environmental decline *(Boguslaw, 1965; Ferkiss, 1969)*. Technique was perceived as a commitment to the continuous improvement of means without a critical examination of ends. As society became increasingly technical, an irreversible rule of technique would be extended to all domains of life and become the primary instrument of performance whether in economics, politics, art, athletics, or sex *(Ellul, 1964)*.

The problems posed by technology transfer were regarded by many critics as ultimately political in nature. The long-term trend was to blur public-private distinctions in public policy, to make an increasing use of scientific knowledge and expertise in public decision-making, and to enhance in general the public aspects of policy *(Mesthene, 1972)*. The advocacy of new technologies was in direct conflict with theories of political process that regarded policy as the consequence of interest group conflict, organized pressure, and governmental response. The form and style of decisions implied by technology transfer was believed to counter participation either on an individual or a collective basis.

Where transferred techniques applied directly to decision making, conflict resolution, or policy formation, the clash with indigenous methods became particularly harsh. The public policy-making process was specifically accused of irrational dimensions that could be substantially reduced by the adoption of problem-solving techniques found effective in military defense and aerospace industries *(Quade & Boucher, 1968)*. The greatest spin-off of the technological revolution, some observers thought, would be well trained engineers and scientists who would put talents and techniques to work on a host of unsolved civic, social and environmental problems.

Systems analysis, operations research, and management science were recommended for the specific benefits of logic and reason that they would bring to policy decisions in federal, state, and local government. Systems engineering and program budgeting were strongly promoted with the expectation that their application to complex social, economical and political issues was not only feasible by mandatory. Simulation techniques, computer models, and corporate planning systems were recommended with enthusiasm for the promise they held in the solution of civic, governmental, and environmental problems. The management sciences were

promoted in a manner that suggested a new cult of efficiency in public education and public administration.

The assumptions underlying the successful transfer to technique, however, were closely questioned. Schick *(1973)* and Wildavsky *(1964; 1966)* stressed the inability of program budgeting to produce budgetary reform in the federal government. Gross *(1972)* pointed out the limitations and potential dangers of management science for economic and social development. Hoos *(1972)* expressed considerable skepticism concerning the advantageous transfer of systems analysis to the arena of public policy. Orlans *(1973)* was almost as skeptical concerning the applicability of the social and behavioral sciences to societal and governmental problems. Brewer *(1973)* documented the failures of computer modeling in urban planning and renewal. Bickner *(1972)* found even less optimism for the transfer of technology to the problems of state government. In brief, skills and techniques successful in one problem area were not necessarily transferable to other areas and their advantages could be circumscribed by the conditions and situations not readily appreciated. The promise of technological transfer thus was not to be fulfilled easily.

METHODS AND MODELS

The difficulties in reconciling the basic conflict between the technical rationality of systems analysis, management science, or program budgeting and the political rationality of public policy may be seen in two models that can be articulated. The advantages and limitations of models have been much discussed and need not be repeated. Models obviously provide a way of looking at complex processes that otherwise might be difficult to visualize. It is quite true that they may be no more than conversation pieces for the practicing administrator *(Jones, 1964)*. But it is equally true that models are popular because they provide a convenient perspective from which to view problems, issues, and trends. They can lend organization and a conceptual grasp that might escape those who analyze policy issues.

A synoptic model of general problem-solving can be readily derived from rational-deductive systems *(Dewey, 1910; 1938)*, early discussions of scientific method *(Cohen & Nagel, 1934)*, and the numerous problem-solving recommendations made by advocates of systems engineering, military strategy, corporate planning, and operations research *(Branch, 1962; Quade, 1964; Simon, 1960; Steiner, 1969)*. A heuristic model of political

decision-making can be readily derived from Diesing's *(1962)* discussion of political rationality, Lindblom's *(1968)* treatment of the policy-making process, Wildavsky's *(1964)* description of federal budgeting, Schick's *(1973)* reasons for the demise of PPBS, Galbraith's *(1967)* discussion of a technostructure in corporate industry, and the work of other political scientists who have addressed the issues of political decision-making *(Bauer, Pool, & Dexter, 1964; Bauer & Gergen, 1968; Truman, 1951).*

A delineation of the distinctive features of these two models should prove helpful in several ways. Not only do they reflect differences in purpose and intent on the part of decision makers but they suggest a number of difficulties in reconciling individual action with group process. As an approach to problem solving, conflict resolution, and policy formulation, each model is an effort to depict in schematic form the insights, suggestions, and recommendations of advocates engaged in public dialogue. It should be obvious, nonetheless, that the two models should have discursive value but cannot supply comprehensive solutions.

General Problem Solving

The transfer of specific technique to the solution of general problems requires several assumptions concerning the nature of sequential relationships among the various components of the problem. Not the least of these assumptions is the belief that problems are solved by breaking out the solution into steps or phases. The subdivision of problems reduces the strain on analytical capabilities and enables the analyst to handle problems otherwise too complex. The logical assumption of linearity, sequence, and integration is, therefore, an ambitious assumption.

The synoptic model is an effort to tie together the various recommendations made by systematic problem-solving approaches. The model makes no assumptions concerning the actual behavior of persons engaged in solving problems. It is not descriptive of any behavior other than that prescribed for the transfer of technique. The steps or phases are either implied or carefully articulated, however, in many different fields of problem-solving endeavor. The model is prescriptive in the sense of abstracting and summarizing these recommendations. For that reason, it should not be confused with the efforts of those who approach problem solving from the empirical analysis of problem-solving behavior. Neither cognitive simulation nor artificial intelligence is involved in the derivation of the model. At the same time, there is nothing about the model that contradicts the work of those who have been concerned with empirical analysis.

Each step in the model involves assumptions concerning the nature of rational behavior. A primary advantage of the model, therefore, should be the assistance it provides in articulating the assumptions that are built into generalized techniques. To incorporate the distinctive features of various systems, a certain amount of redundancy is unavoidable. This redundancy is evident not only in the wording chosen to identify the specific phase but in the phases themselves. As a result, a certain amount of overlap is present among the various steps.

For simplicity, no feedback loops are shown in the model. Step seven is intended as a generalized step that may be applied as necessary at other places in the overall sequence. Since feedback is a necessary component of any system's approach, the model is thus simplified for purposes of explication.

Because of the special usage that certain terms acquire in various systems, some semantical confusion is inevitable. A consideration of the model in its entirety should indicate the specific usage intended at a particular phase or step. Semantical confusion can be reduced simply by ignoring any term that does not appear appropriate for the actions recommended.

The steps in the synoptic model may be described briefly as follows:

1. The first step is a period of preparation in which the problem is analyzed. It recommends an active concern with the selection of situational inputs and an operational, as opposed to logical, definition of the problem. Given the contextual dimensions of the problem, the choice of the problem is anything but passive. The problem is neither chosen nor given in a simplistic manner. It must be actively created, defined, structured, formulated, or planned. The activity at this stage is not only preliminary to what follows but imposes serious constraints on all that follows. The conceptualization or perception of the problem at this stage may be the major determinant of solution efforts.

2. This stage identifies the problem in terms of the needs that must be satisfied and the options that are open. If the term crisis is said to contain two meanings—chaos and opportunity—this stage presumably involves an opportunity survey or search for the advantages inherent in the situation and the needs survey in the sense of satisfying

crucial requirements. Key questions are: What does an adequate solution consist of? What are the demands to be satisfied? What are the characteristics of a satisfactory criterion? Will the solution be recognized? To no small extent, the concern is with the design of a solution and the choice of a criterion by which to recognize the solution.

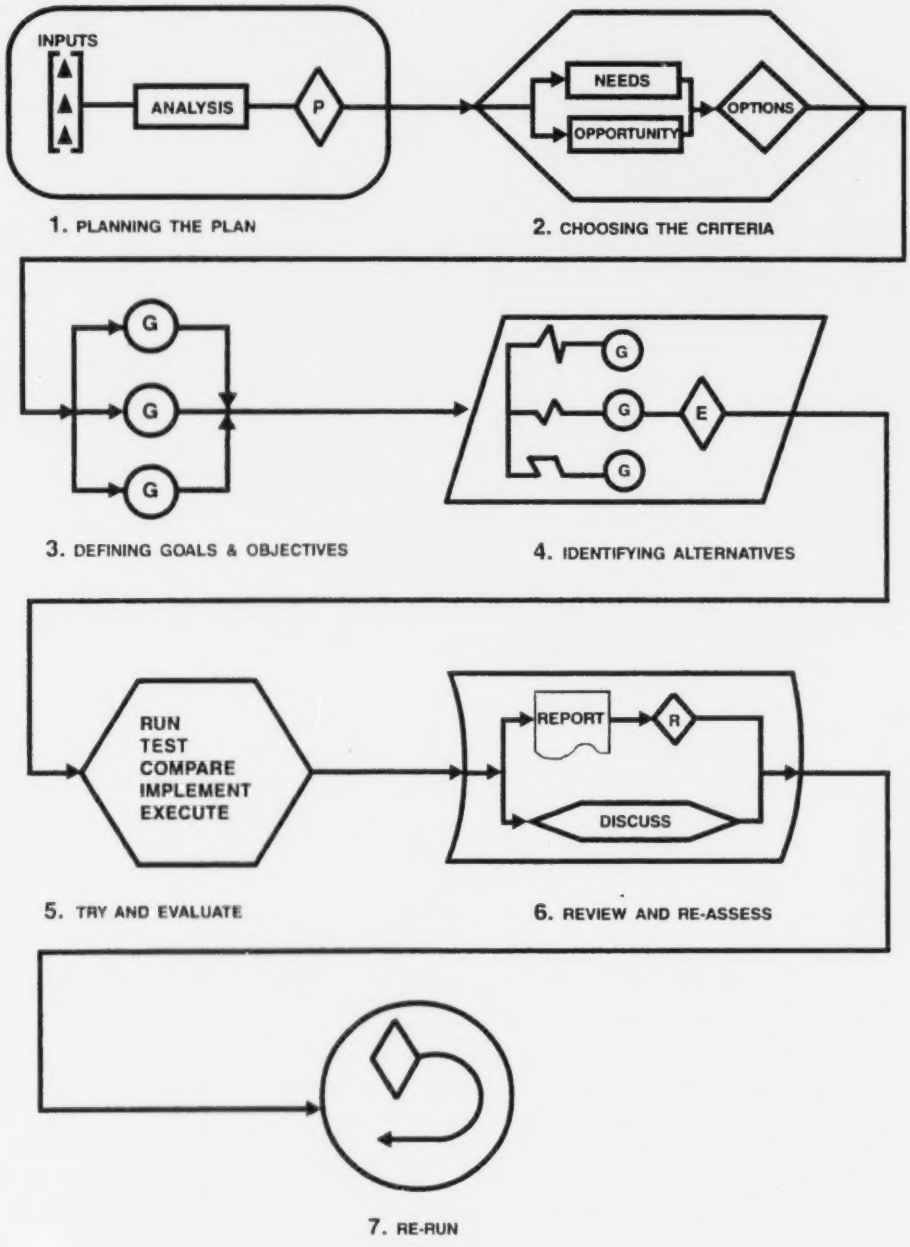
3. Goals and objectives are explicitly considered in the third stage. Goals are commonly defined as the broad, general, philosophical dimensions of the future while objectives are said to be the specific, concrete, obtainable targets. Destinations, outcomes, and results must be specified in terms of the overall mission and its purpose. Goals and objectives presumably can be ranked and some acceptable order of priority can be assigned.

4. The fourth stage is an effort to identify, define, and describe the alternative courses of action that are permissible under the constraints of the situation. The major concern is with ways and means to accomplish the goals and objectives identified in the previous stage. The internal steps are identified as: (a) the identification of outcomes and their implications, (b) a consideration of the limitations and disadvantages that might be involved, and estimates of costs and benefits that might accrue. The construction of a model may be the dominant activity at this stage of the process. Alternatives are assessed in terms of their consequences, and means are analyzed in terms of their ends.

5. Whereas previous stages have been preparatory to action, this stage implies entry into the arena. The model is activated; the consequences are tested; the means are executed. The running of the model, the trial-and-error commitment, the provisional action phase are all ways of testing the previous four stages in terms of their relevance for a practical solution.

6. Having tested for results in the previous stage, the effects of that action are new evaluated. Results are reported, reviewed, discussed, and digested. Reassessments are made as necessary. The emphasis is on the product, the outcomes, or the result as opposed to the process or the previous preparation. This stage may include the packaging of the system, the development of a delivery system, or the establishing of routine operational procedure.

Figure 3.
A SYNOPTIC MODEL FOR GENERAL PROBLEM SOLVING



7. The essential notion in the terminal stage is simply not to terminate the process with a single effort. The solution of problems is seldom final and decisions are unlikely to be conclusive. The terminal stage is thus described as one in which termination is not regarded as an irreversible event. The problem has been created; a solution has been designed; objectives have been defined; alternatives and consequences have been identified; action has been taken; and outcomes have been assessed—will it all hold together the second time around?

Decision Making

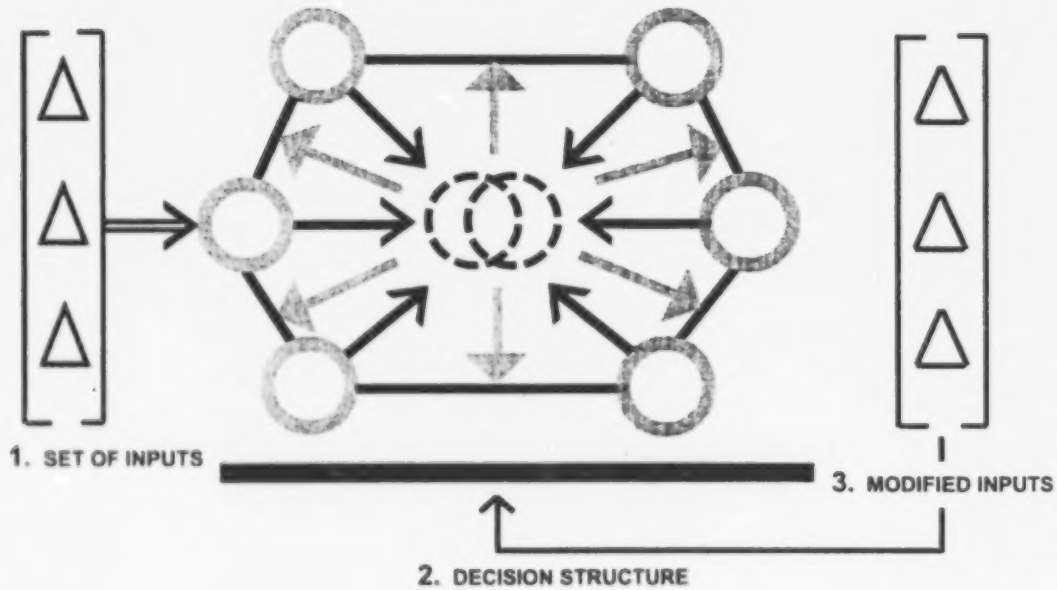
The linearity or sequentiality of the synoptic model for general problem solving makes an interesting contrast with the heuristic model of political decision making. Whereas the former may or may not involve group participation, the latter is necessarily a group process. As a result, the former implies a precision and accuracy that is unmatched by the latter.

The features of the heuristic model may be described in the following manner:

1. The dominant feature of the heuristic model is the centripetal direction of inquiry, influence, or pressure. The center of the model is the target for participants in the decision-making process, and action is an interchange rather than a sequential process.

2. The second feature is the imprecise location of the center. Continued leadership, authority, or status is dependent upon the center's neutrality, controlled bias, or ability to hold conflicting interest groups, ideologies, and forces in a state of effective counterbalance. The centers preferences are subdued in favor of a continued state of dynamic tension for the decision-making structure as a whole. To maintain this state of dynamic tension, the efforts of the center are primarily adjustive. Inquiry and pressure from the participants are not answered directly but reflected back to the internal relations among the various participants. Conflicting opinions, pressures, and threats are mirrored back for a view of the changes that would result from their implementation. The authority of the center is maintained only if it can stimulate an optimal degree of non-directiveness. The center must be visible, but its position on policy issues is seldom hard and fast.

Figure 4.
A HEURISTIC MODEL FOR POLITICAL DECISION MAKING



3. A third feature is the relative anonymity of participants and the indefinite nature of their interrelations. Anonymity is permissible in the decision structure and may often be encouraged. The equality of roles is virtually impossible to assess, and there is an absence of summative effect because the components or participants interact in ways that are not clearly articulated. The behavior of participants may be described as trading, bargaining, negotiating, compromising; the role of the center as that of a mediator. Individual goals and preferences are paramount among the participants but relatively subdued in a context of group process. Conflicting goals must be reconciled; the decision structure is the means to that end.

4. The outputs of the decision-making process are modified inputs for other decisions and observation of the decision-making structure. This feature of the process accounts for much of the belief that political decision making never fully satisfies outsiders in definitions

given to the problem or its apparent solution. The process is seldom as conclusive as outside observers expect, and the group process itself obscures much of the logical sequence that critics and observers believe to be present in the generalized techniques of problem solving. The inherent vagueness of the process, therefore, is difficult to understand from the outside. Timing would appear to be especially crucial. If a political decision is reached too fast, suspicions of collusion are aroused; if decisions are reached too slowly, the participants are accused of pusillanimity. But perhaps most of all, the political decision-making structure reflects what Simon *(1951)* has referred to as the bounded rationality of administrative decision. Generalized methods of problem solving call for a completeness of knowledge, an anticipation of consequences, and a choice of alternatives that exceed the capacities of the group for problem formulation and solution *(Braybrooke and Lindblom, 1963)*. This limitation of rationality may be dramatically underscored when techniques of decision making are transferred from one organizational setting to another.

THE DIFFICULTIES OF POLICY DECISIONS

A critical examination of the two models reflects a pervasive conflict in modes or styles of thinking. This conflict is present in both the structural and functional features of the models and indicates a basic incompatibility between processes that are sequential and processes that are transactional. The nature and extent of the conflict gives little reason to expect an easy transfer of general problem-solving techniques to situations where forms of political rationality and decision making prevail.

The contrast between systems analysis and political process has been drawn by Schlesinger *(1968)*; the former has been given a false image by its critics while the latter is dominated by its own species of logic. The symbolic gesture acquires an exaggerated importance in politics and neither cost, alternatives nor consequences may be considered until after a political decision is made. The Department of Defense is seen by Schlesinger as a special case that could not provide a model of reform for other federal agencies and departments. The services of other departments create clientele within the electorate that must be satisfied, and the fundamental issues of choice cannot be resolved by the modernization of government alone.

Yet it is most important to recognize that there is no inherent wisdom in political process that is unavailable to other systems or styles of rationality. A preference for political decision-making models should not be justified on assumptions that they decentralize decision-making powers. Guarantees of dispersed participation are not present in either model. The transfer of technique may inevitably affect the distribution of power but the direction and momentum of dislocation are not inevitable.

Nor is there any particular advantage in classifying general problem-solving models as comprehensive or classical and political decision-making models as incremental *(Thompson, 1971)*. This distinction between the two sets of models is much too simple and may do a disservice by preparing a trap into which the naive can easily step. The rejection of PPBS by public administrators and some political scientists has been in terms of the economic rationality imposed upon political decisions and not the technical rationality that is implied in the procedures of PPBS *(Wildavsky, 1969)*. Other critics of decision theory have defined rationality too narrowly and imply that public policy makers cannot rationally choose to be completely rational but they can rationally choose to be irrational.

The conflict in cognitive styles implied by the two models should not be interpreted as a confrontation between rationality and irrationality; it should be obvious that the differences are one of style and preference as well as inherent suitability. Rational-deductive modes of thought are not completely absent in political decision making and political matters do arise in the most objective, technological contexts. Although no immediate integrative or conciliatory solution is readily available, an increased awareness of the basic conflict in models is a necessary start. Political rationality makes no pretense of complete objectivity but does occasionally assume a technical, objective, systematic posture. In much the same manner, rational-deductive systems do not always ignore the personal, social, and organizational dimensions of the problems they would presumably solve.

The transfer of general problem-solving techniques is subject to question, therefore, for many reasons. Most crucial is the failure to consider institutional or organizational differences and particularized methods of problem solving, decision making, and conflict resolution. Generalized technique cannot easily handle habits, customs, sentiments, and preferences that are somehow accommodated within particularized forms of

rationality. The effectiveness with which conflict is resolved, personal goals satisfied, and individual preferences acknowledged by particularized forms of rationality may go unnoticed in the haste to impose a more logical, direct, effective method. As situational conditions differ, traditional methods of decision making, planning, and policy formulation become more prominent. Although the flexibility or adaptability of a synoptic model is assumed to be one of its strongest features, that feature may have been overemphasized.

It is the generalized nature of systems analysis, operations research, and management science that has made their transfer to other areas difficult. Each is a specialized form of technical rationality but its application is advocated in a generalized form. Successful transfer is not assured because the technique or style of rationality, to some extent, is always situation-bound. The effectiveness of such techniques often fall short because they do not adequately consider the technique they are replacing, the traditions or peculiarities of the organization or institution to which they are being transferred, and the timing or phasing of their application. The generalized problem-solving methods of each set of techniques are limited in application because other forms of rationality may be dominant.

Both the generality and the specificity of theory and method are often overestimated. There is a level of abstraction or a degree of generality that is too great for the practical advantages and gains of problem-solving efforts in the specific situation. Examples of this difficulty are seen in mathematical models, logical systems, and general systems theory. The highly generalized constructions of mathematics are frequently so general that they have little contact with the real world of human experience. When the level of abstraction is too great, such constructions are castigated as hollow deductive formalisms. The system is said not only to lack content but to explain nothing by explaining too much. In contrast, other systems or theories may be too specific and tied too closely to the empirical data they explain. All these arguments have been directed to the recent uses and applications of systems analysis and management science.

A serious search should be made for complementary features within technical problem-solving and political decision-making models. The dominant solution should not be the pessimistic conclusion that the two sets of models are irreconcilable. Neither model represents reality so fully that the other can be regarded as superfluous. It has been premature, therefore, to infer that because general problem-solving techniques did

not easily replace more traditional methods of political decision making, the latter are more effective in their expression of public policy. Better comparative analysis of the two approaches is needed.

Whether the complementary features of the two models can be found in their structural features remains to be seen. The conflict between the two should not be perceived solely in terms of individual versus group process, idiosyncratic versus nomothetic dimensions, sequential versus transactional process, or serial versus simultaneous processing. Yet, all of these features are present.

Generalized techniques have shown an adaptability to recurring decisions that must be properly appreciated while political process has displayed an accommodation of unique events. Although the linear and serial processing features of problem-solving models command attention, they may not be as dominant as first supposed. One disadvantage of the synoptic model given here is the fact that it is somewhat truncated. Systems analysis, operations research, and management science have not dealt effectively with the development-dissemination-diffusion process that follows the successful derivation of a problem solution. The chain from invention through design, development, diffusion, and adoption is neither well articulated nor well understood. Public policy is not readily noted for its receptivity to invention and design but does involve a complex process of diffusion and adoption.

In closing, both general problem-solving models and political decision-making models have an advantage in their effective rationality. They are successful in dealing with restrictive phenomena or limited experience and remain effective only as long as they do not seek an unrealistic level of generality. Different forms or styles of rationality are ineffective when their limitations are not clearly understood and efforts are made to apply them where they cannot succeed. The limitations of PPBS, systems analysis, and operations research in societal, governmental, and environmental issues are accentuated by their lack of appropriate sensitivity to the political realities of public policy. But the basic conflict between technical rationality and political rationality is a broader issue than the incompatibility of technique and organizational setting. The magnitude and complexity of problems now confronting public policy-makers exceed the capabilities of any one model or system for policy formation. Neither political rationality nor technical rationality, as currently applied, is sufficient; both are needed and their complementary features should be closely studied.

ENDNOTES
PUBLIC POLICY

[1]For one statement of the issue, see Daniel P. Moynihan, Policy vs. Program in the 70's, *The Public Interest*, Summer, 1970, pp. 90-100.

[2]See *Windows to the Bureaucracy*, Washington, DC: National Advisory Council on Education Professions Development, 1972.

[3]Clark Kerr has given an overview of the Commissions' work in Dyckman C. Vermilye (Ed.) *The Expanded Campus: Current Issues in Higher Education*, San Francisco: Jossey-Bass, 1972, pp. 3-21; the work of other commissions or task forces is found in *Assembly on University Goals and Governance, A First Report*, Cambridge, MA: American Academy of Arts and Sciences, 1971 and HEW Task Force, *Report on Higher Education*, Washington, D.C. : U.S. Government Printing Office, 1971.

[4]For further discussion of the public policy-making process, see Charles E. Lindblom, *The Policy-Making Process*, Englewood Cliffs, N.J.: Prentice-Hall, 1968 and his earlier work with David Braybrooke, *A Strategy of Decision*, New York: Free Press, 1963. The best illustration of the overall process is found in Raymond A. Bauer, Ithiel de sola Pool, and Lewis A. Dexter, *American Business and Public Policy: The Politics of Foreign Trade*, New York: Atherton Press, 1964 and a delightful account of internal dynamics is given in Aaron Wildavsky, *The Politics of the Budgetary Process*, Boston: Little, Brown, 1964.

[5]V.O. Key, Jr. *Politics, Parties, and Pressure Groups*, Fourth Edition, New York: Thomas Y. Crowell, 1958, p. 747.

[6]Key, p. 23. See also David B. Truman, *The Governmental Process: Political Interest and Public Opinion*, New York: Alfred A. Knopf, 1951.

[7]Harold Orlans. *Contracting for Knowledge*. San Francisco: Jossey-Bass, 1973.

[8]Abraham Kaplan, *The Conduct of Inquiry*, San Francisco: Chandler Publishing, 1964, p. 404.

[9]For a single, quick reference to decision theory, see Robert C. Weisselberg and Joseph G. Cowley, *The Executive Strategist: An Armchair Guide to Scientific Decision-Making*, New York: McGrawHill, 1969.

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